

BOTANICAL SOCIETY OF EDINBURGH.

February 9, 1854.—Professor Balfour, President, in the Chair.

The following papers were read:—

1. "On the occurrence of *Anacharis Alsinastrum* in Ireland," by G. Dickie, M.D. The author remarks that they have probably the earliest record of the presence of the *Anacharis* in the United Kingdom, for Mr. John New, a gardener, informs him that "about eighteen years ago, the pond at Waringstown was cleared of overhanging trees, when the *Anacharis* was immediately observed, after the planting of some aquatics, making it necessary several times during the summer to clear it out. It is not known whether it existed in the pond previously to the above date, or was introduced with the aquatics at that time. For many years its name was not known to any person in the neighbourhood."
2. "Notes of a Botanical Trip to the Tents Muir, in the north of Fife, in July last," by Mr. G. Lawson. The object of these notes was to call attention to a rich locality, which, although within easy reach, had not hitherto been much examined by Edinburgh botanists. It is an extensive tract, chiefly of sand dunes, extending along the coast from Ferry-Port-on-Craig to the river Eden. The following were among the plants noticed: *Anagallis tenella*, *Lycopodium inundatum*, *Littorella lacustris*, *Teesdalia nudicaulis*, *Radiola Millegrana*, *Sisymbrium Sophia*, *Fumaria micrantha*, *Senecio viscosus*, *Juncus balticus*, *Papaver Argemone*, *Chrysanthemum segetum*, *Veronica Anagallis* and *scutellata*, *Peplis Portula*, *Malva sylvestris*, *Myosotis collina*, *Bryum warneum* (Mr. Ogilvie), *Weissia nigrita*, *Didymodon inclinatum*, *Stereocaulon tomentosum*. The pools and moist hollows on the Muir were rich in freshwater Algæ, including Nostochineæ and Desmidiæ. The party did not find *Isnardia palustris*, and fancied that the abundance and luxuriance of *Peplis Portula* might have led to some mistake. The *Peplis* afforded a retreat for myriads of *Hydra viridis*.
3. "Notice of Localities for Rare Plants in the neighbourhood of Edinburgh," by Mr. G. R. Tate. The following were among the plants noticed:—
Alyssum calycinum. On debris below the Queen's drive, near Duddingston. "I noticed the plant in this locality in the month of May before it was in flower; at that time there were a number of specimens. As the season advanced and the locality became more generally known, nearly the whole were eradicated. It is hardly possible that the *Alyssum* could have escaped the notice of the numerous botanists visiting Arthur's Seat and its neighbourhood, had it existed in this locality for any length of time. The probability is, that it had been introduced by seed sown, at no very distant date, by some one anxious to add a species to a flora already overstocked with doubtful natives. I obtained this plant at Burntisland, in very small quantity."

Sinapis Cheiranthus. In a field near Gullane. Not previously found in Scotland, and doubtfully indigenous.

Drosera longifolia. In bogs at the foot of the Knock Hill, not far from the station of *Carex irrigua*.

Hypericum Androsæmum. Near Culross.

Hypochaeris glabra. Near Culross.

Lamium maculatum. Banks of the Esk, about two miles above Musselburgh.

Rumex alpinus. In two localities near the Knock Hill, both near cottages.

Tulipa sylvestris. Sides of the Water of Leith, above Currie.

Zannichellia palustris. Canal near Fountain Bridge.

Carex incurva. Sea-shore between Longniddry and Prestonpans.

4. "On the Nightshade Family," by Mr. Peter Fairbairn. Mr. Fairbairn detailed the character and properties of the *Solanaceæ*, and alluded particularly to the nature and qualities of the alkaloids yielded by different genera and species. He remarked that the effect produced by such alkaloids as Hyoscyamine, Daturine, and Atropine were different from those produced by Solanine, especially as regards the dilatation of the pupil.

Dr. T. Anderson remarked that Mr. Fairbairn had not adopted the division proposed by Miers into *Solanaceæ* and *Atropaceæ*, orders which were distinguished by æstivation and other botanical characters, as well as by their physiological properties. He did not consider that any correct evidence had been adduced of the narcotic properties of the species of *Solanum*. The infusion of *S. Dulcamara* could be given in large quantities without producing any narcotic effects, and its berries had been used as a preserve. The effects of the plants belonging to the order *Atropaceæ* did not develop themselves like those of opium; they were more of a stimulant character and were slowly produced, and they were accompanied with marked enlargement of the pupil.

5. "Illustrations of the value of Botanical Histology to the Medical Student and Practitioner," by Dr. Lindsay, Assistant Physician to the Crichton Royal Institution, Dumfries. The author stated that the origin of this paper was due to the fact that there existed among the medical students of the Edinburgh University, a strong feeling that they are compelled by the Curriculum-regulations to learn too much of the collateral sciences of natural history, chemistry and botany,—botany being, in particular, a science, the knowledge of which is regarded as quite unnecessary for the practice of their profession. The idea that the study of the scientific or theoretical disqualifies to a certain extent from the acquirement of practical knowledge is a fatal error, and he believed that every Professor of the University could bear testimony to the fact that those students who had distinguished themselves in one department of their Academic curriculum generally did so equally in every other. Dr. Lindsay's object in this communication was merely to lay before such sceptics the results of the short experience of one but lately a *student*—of one who had been at the same time a scientific and a "practical man."

and to point out more especially by a few illustrations the value of microscopical botany to the general practitioner.

March 9, 1854.—Professor Balfour, President, in the Chair.

The following papers were read, viz. :—

1. "On the Pollen of *Zamia horrida*," by J. H. Balfour, M.D. The pollen is in its ordinary condition elliptical, with a groove in one side, resembling very much a grain of wheat in appearance. The groove is formed by the folding inwards of the edges of the pollen-grain, which when fully expanded under the action of water becomes completely spherical. When water is applied under the microscope, the two edges of the groove are seen to unfold and spread out so as to produce the circular grain; when allowed to dry, the grain resumes the elliptical grooved condition. It is perhaps difficult to say whether the elliptical or the spherical form is to be looked upon as the characteristic one; the elliptical being the dry state of the pollen, while the spherical is the moist condition. The true structure is rendered more apparent by an application of iodine. The pollen of Cycads is stated by many to be angular. This is not the form in *Zamia horrida*.

2. "Notice of the Muscology of the East Coast of Fife," by the Rev. Thomas Brown. The author offered some observations on the distribution of Mosses on the east coast of Scotland, with reference more particularly to such stations as the Sands of Barrie, the Tents Muir, Elie and Gullane Links, which although all situated close to the sea-shore, presented several alpine species. He enumerated the Mosses found by him in the neighbourhood of Elie, which included a variety of *Mnium affine* not previously found in fruit in Britain, *Bryum dealbatum*, *Hypnum abietinum*, *Encalypta rhamnocarpa*, *Didymodon inclinatum*, and other unusual species.

3. "Note on the supposed Antheridia of the *Rhamnæ*," by J. S. B. Sanderson, M.D. A careful examination of the buds of various species of *Rhamnus*, particularly of *R. catharticus*, led the author to believe that the club-shaped organs described by Grisebach differed from the antheridia in not being developed from a single special mother-cell, in not possessing a central cavity at any period of their growth, and in containing a resinous secretion. He could not detect the "long-tailed globules enclosed in minute spherical cells," observed by Grisebach to oscillate in a very lively manner.

4. "Register of the Flowering of certain hardy plants in the Royal Botanic Garden from 9th February to 7th March, 1854," by Mr. James M'Nab.

5. "On the Anatomical Structure of Coniferæ and other Gymnogens," by Mr. G. Lawson. The author remarked that the structure and development of the wood-cell had been well elucidated by Hugo von Mohl in various papers in the 'Annales des Sciences Naturelles,' and in his work on 'The Vegetable Cell,' but there was one aspect in which the subject had not been so fully viewed as appeared desirable. Mr. Lawson's examinations had been undertaken principally for the purpose of ascertaining in how far the peculiarities in the minute

anatomy of the Coniferæ coincided with their general structure, and might be depended upon in the determination of their orders, genera and species,—an inquiry from which fossil botany and investigations relative to timber were likely to derive advantage. After detailing the general structure of the wood-cells of Coniferæ, and pointing out peculiarities that occurred in various plants of the order, he described a remarkable modification which had been noticed in the Yew, viz. the presence in the wood-cell of what appeared to be a spiral fibre, but which had been shown by Harting to be a connected pellicle with thickened ridges arranged in a spiral manner. Mr. Lawson had found this structure to be by no means so rare as had been supposed, and although principally confined to plants belonging to Taxaceæ, it was stated not to be universal in that order, nor peculiar to it. He had observed it in the following plants:—*Cephalotaxus Fortuni*, *C. pedunculata*, *C. tardiva*, *Torreya taxifolia*, *T. nucifera*, *Taxus baccata*, *T. canadensis*, *Podocarpus japonica*, *P. koraiana*, *Abies Douglasii*, *Fitzroya patagonica*. It also occurred in a specimen of pine wood from Upper California, which presented interesting microscopical characters, but which he had been unable as yet to identify. This structure was not to be confounded with the faint spiral streaks seen under a high power on the secondary membrane of the wood-cells of many Coniferæ. It had been long a question whether true punctated tissue was strictly confined to Gymnogens. A careful examination of *Drimys granatensis* and other plants had led him to believe that the disks which occurred in aromatic trees were essentially the same as those of Coniferæ, and indeed accorded in a remarkable manner with those of many Araucariæ and Taxaceæ, in which the central dot was not circular, but formed by two elliptical slits crossing each other. The manner in which this appearance arose was fully explained by a reference to the spiral arrangement of the slits, which also seemed to account for the alternation of the disks in *Araucaria*. In the determination of fossil plants and of unknown timbers, Mr. Lawson believed that valuable characters were afforded by the peculiarities of the wood-cell, such as its general size, presence or absence of a spiral tertiary membrane, arrangement of disks (alternate or opposite), their distance from each other in different directions, and whether in single, double, treble, or quadruple rows on each cell; absolute size of the disc, and its breadth as compared with that of the cell; form of disc, whether circular, elliptical or angular, or a combination of these forms; form of central dot, and (if not circular) direction of the same. The cells of the medullary rays, and the pits in connection with them also afforded useful marks of distinction. By aid of the above characters, to which many more might be added, he had been able to mark distinctions between timbers whose appearances to the naked eye presented no definite characters. It was of great importance, however, in adopting such distinctions, that we should also retain the other means of investigation we possess, and his present attempt was meant not to displace, but to supplement these. He is still engaged in the prosecution of the subject, and expressed an anxiety to obtain additional

specimens for examination. Specimens of the timber of *Wellingtonia gigantea* presented under the microscope a double row of opposite disks, which, as well as their central dot, were elliptical.

6. "On *Ophioglossum lusitanicum*, Linnæus," by Thomas Moore, F.L.S. The author remarked that the discovery of the *Ophioglossum lusitanicum*, L., within the politico-geographical limits of Great Britain, so soon after that of the *Gymnogramma leptophylla*, another S. European fern, is a fact of much interest; and thought that a short account of the plant drawn up from fresh Guernsey specimens might be of some interest to those who are studying either our native Ferns or our native flora.

MISCELLANEOUS.

Note on the Vegetation of Mount Argæus in Cappadocia.

By M. P. DE TCHIHATCHEFF.

As Mount Argæus, of which I have ascertained the height to be 3841 metres above the level of the sea, consists of a certain number of *plateaux*, forming so many terraces arranged one above another, with intervening slopes of greater or less abruptness, the study of the most characteristic vegetable forms of these *plateaux* may furnish an approximative idea of the vegetable physiognomy of the giant of Asia Minor, which had not been visited by any botanist until I ascended it in August 1848. Amongst these *plateaux*, of which I have indicated the respective positions in my work on the 'Géographie physique de l'Asie Mineure,' the most considerable are, that of Tékir, situated on the eastern side of the mountain, at an altitude of 2128 metres, and the three *plateaux* arranged in steps on its southern face, by which one ascends from the plain of Everek to the summit of the mountain. These *plateaux* may be designated by the following names, rising from the bottom upwards: the basaltic plateau, placed immediately above the plain of Everek, which constitutes the southern foot of the mountain; the lower plateau; and lastly, the upper plateau, which leads to the central cone, crowned by the crater, which is surrounded on the south side by a barrier of inaccessible trachytic rocks.

The great number of limpid streams which water the surface of the Tékir plateau, maintain a pretty good vegetation in that locality. Amongst the plants in flower on the 17th of August, I observed, *Oxyria reniformis*, R. Br. sp., *Carduo deflorato* aff., L., *Podospermum intermedium*, *Solidago Virgaurea*, L., *Chamæmelum oreades*, Boiss., *Helichrysum globiferum*, Boiss., *Andrachne telephioides*, L., *Lamium armenium*, Boiss., *Silene argæa*, n. sp., *Phyteuma linifolium*, Boiss., *Pulsatilla albana*, Stev., *Sibbaldia parvisolia*, Willd., &c.; as well as some species of *Asperula*, *Odontites* and *Androsace*, which were less characteristic.

The basaltic plateau, the dry poor soil of which is strewed with blocks of stone and pierced by projecting rocks, is only covered with